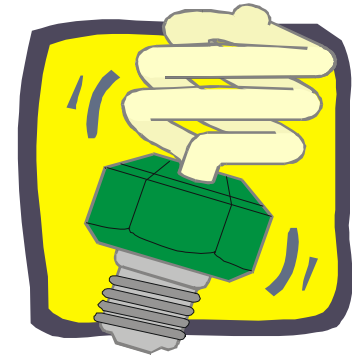




Home Lighting Energy-Saver Detective Analysis: How much energy can I save?

Student Page 3-3

How much energy could you save by using energy-efficient compact fluorescent lights (CFLs) in your home?



12. Use the answer you discovered in problem 11 to figure out how many kilowatt-hours your family could save in a year by replacing the light bulbs in your home with energy-efficient compact fluorescent light (CFL) bulbs.

$$\begin{array}{rcll} \underline{\hspace{2cm}} & \times & 365 & = \boxed{\hspace{2cm}} \\ \text{Answer in 11} & \text{Days in} & & \text{Kilowatt-hours saved in a year} \\ & \text{a year} & & \end{array}$$

13. Every 11 kilowatt-hours saved is equivalent to the amount of energy contained in one gallon of gasoline. Compare the energy you could save in a year to the energy contained in a gallon of gasoline by completing the equation below.



$$\begin{array}{rcll} \underline{\hspace{2cm}} & \div & 11 & = \boxed{\hspace{2cm}} \\ \text{Kilowatt hours saved in a year} & & \text{kilowatt-hours} & \text{energy saved is} \\ \text{(Your answer in 12)} & & & \text{equivalent to} \\ & & & \text{gallons of gasoline} \end{array}$$



How much money could you save by using energy-efficient compact fluorescent lights (CFLs) in your home?



14.

The answer you figured out in problem 12 told you how many kilowatt-hours of electricity your family could save in a year by replacing all the light bulbs in your home with energy-efficient compact fluorescent (CFL) bulbs.* If the cost of each kilowatt-hour is eight cents, how much money could your family save?

_____ X \$.08 =
Kilowatt hours saved in a year
(Answer in 12)

\$

Saved in a year

*Your actual savings may be different in the first year because the initial cost of a CFL is not included in this calculation, and you may pay more or less for each kWh. Also, most people only replace the lights in high-use areas.



Home Lighting Energy-Saver Detective

In-class Analysis: How much greenhouse gas can our class prevent by using energy-efficient compact fluorescent light (CFL) bulbs?

Electricity gives us the power to use our lights, computers, and other home appliances. But, making this electricity also creates greenhouse gas in the form of carbon dioxide (CO₂), sulfur dioxide (SO₂), and nitrogen oxide (NO_x). When we use energy-efficient light bulbs, like CFLs, we use less electricity. Making less electricity means less greenhouse gas. Add the total kilowatt-hours saved in a year (answer in 12) by everyone in the class and write it in the answer block below.



15.

16.

The amount of CO₂ greenhouse gas prevented by saving electricity will depend on how much electricity in your area is produced from fossil fuels. If we assume that every kilowatt-hour saved removes 2 pounds of carbon dioxide (CO₂) from the air, how much CO₂ could your class remove in a year by replacing all your light bulbs with energy-efficient compact fluorescent (CFL) bulbs?

$$\underline{\hspace{2cm}} \times 2 \text{ (pounds)} = \boxed{\hspace{2cm}} \text{ pounds}$$

Answer in 15 CO₂ greenhouse gas prevented



17.

Saving 3,450 kWh/year prevents the CO₂ greenhouse gas equivalent to the CO₂ greenhouse gas removed by an acre of growing trees. Look at your answer in 15. Would replacing the light bulbs in your home with energy-efficient compact fluorescent (CFL) bulbs prevent CO₂ greenhouse gas...

< or > or =

... the CO₂ greenhouse gas removed by an acre of trees.